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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,710	07/22/2003	Alexander Gantman	030464	8120

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EXAMINER	
PARTHASARATHY, PRAMILA	
ART UNIT	PAPER NUMBER
2136	

NOTIFICATION DATE	DELIVERY MODE
05/04/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/625,710	GANTMAN ET AL.	
	Examiner	Art Unit	
	Pramila Parthasarathy	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-14,16-22,24-28,30-61* is/are rejected.

7)☒ Claim(s) *5,6,15,23 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the communication filed on February 15, 2007. Presently Claims 1 – 61 (please refer to Allowable subject matter) are pending.

Terminal Disclaimer

2. The terminal disclaimer filed on 2/15/2007 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of 10/077,365, 10/873,656, 10/785313 and 10/139,873 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

3. Claims 5, 6, 15, 23 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Prior art of record even in combination does not explicitly disclose generating the access code using the cryptographic key and the challenge.

Response to Arguments

4. Applicant's remarks filed on February 15, 2007 have been fully considered.

Applicant argues that prior art Owens et al. (U.S. Patent Number 5,481,611) in view of Bolinth et al. (US Publication Number 20050047514) does not teach "the converter encoding the access code into sound waves using multicarrier modulation". Examiner directs to Owens for ""a converter configured to convert the access code into sound waves (See Owens Column 9 lines 1 – 40)" and Bolinth for "multi-carrier modulator that converts stream data (audio data) using multi-carrier modulation (See Background paragraph [0006] and [0018 – 0030]".

Applicant's general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Therefore, the examiner respectfully asserts that the cited prior art does teach or suggest the subject matter broadly recited in independent claims. The dependent claims are rejected at least by virtue of their dependency on the dependent claims and by other reason set forth in this office action. Accordingly, the rejection for the pending claims is respectfully maintained.

Furthermore, Examiner suggests amending the Claims 5, 6, 15, 23 and 29.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1 – 4, 7 – 14, 16 – 22, 24 – 28 and 30 – 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owens et al. (U.S. Patent Number 5,481,611) in view of Bolinth et al. (U.S. Publication Number 2005/0047514).

Regarding Claim 1, Owens teaches a storage medium configured to store a cryptographic key (Summary and Column 9 lines 1 – 9);

a processor coupled to the storage medium and configured to generate an access code using the cryptographic key (Summary and Column 9 lines 1 – 40);

a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "the converter encoding the access code into sound waves using multicarrier modulation" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However,

Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 11, Owens teaches generating an access code using the cryptographic key (Summary and Column 9 lines 1 – 9);

converting the access code into sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

outputting the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "the converter encoding the access code into sound waves using multicarrier modulation" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of

the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 19, Owens teaches means for storing a cryptographic key (Summary and Column 9 lines 1 – 9);

means for generating an access code using the cryptographic key (Summary and Column 9 lines 1 – 40);

means for converting the access code into sound waves (Summary and Column 9 lines 1 – 40); and

means for outputting the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "the converter encoding the access code into sound waves using multicarrier modulation" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier

modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 27, Owens teaches code segment configured to generate an access code using a cryptographic key (Summary and Column 9 lines 1 – 40);

code segment configured to convert the access code into sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

code segment configured to output the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "the converter encoding the access code into sound waves using multicarrier modulation" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 30, Owens teaches a storage medium configured to store a cryptographic key (Summary and Column 9 lines 1 – 9);

an audio input unit configured to receive sound waves encoded with an access code (Summary and Column 9 lines 1 – 40);

a converter coupled to the audio input unit and configured to recover the access code from the sound waves (Summary and Column 9 lines 1 – 40); and

a processor coupled to the storage medium and the converter, the processor configured to verify the access code based on the cryptographic key and to grant access if the access code is verified (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "an audio input unit configured to receive sound waves encoded with an access code using multicarrier modulation;" and "the converter recovering the access code from sound waves using multicarrier demodulation" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 41, Owens teaches receiving sound waves encoded with an access code (Summary and Column 9 lines 1 – 40);

recovering the access code from the sound waves encoded with an access code (Summary and Column 9 lines 1 – 40); and

verifying the access code based on the cryptographic key (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "receiving sound waves encoded with an access code using multicarrier modulation;" and "recovering the access code from the sound waves using multicarrier demodulation" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 50, Owens teaches means for storing a cryptographic key (Summary and Column 9 lines 1 – 40);

means for receiving sound waves encoded with an access code (Summary and Column 9 lines 1 – 40);

means for recovering the access code from the sound waves (Summary and Column 9 lines 1 – 40); and

means for verifying the access code based on the cryptographic key (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "means for receiving sound waves encoded with an access code using multicarrier modulation" and "means for recovering the access code from the sound waves using multicarrier demodulation;" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Regarding Claim 59, Owens teaches code segment for receiving sound waves encoded with an access code (Summary and Column 9 lines 1 – 40);

code segment for recovering the access code from the sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

code segment for verifying the access code based on the cryptographic key (Summary and Column 9 lines 1 – 40). Owens does not explicitly teach "code segment for receiving sound waves encoded with an access code using multicarrier modulation" and "code segment for recovering the access code from the sound waves encoded with the access code using multicarrier demodulation;" (An audio encoder 44 converts the encrypted digital time code and the audio encoding and are acoustically coupled to facilitate communication with the host, see Owen Column 7 lines 31 – 56). However, Bolinth teaches a multi-carrier modulator or demodulator of the transmit and receive device, wherein the signal (access code) is converted into sound waves using multi-carrier modulation (see Bolinth paragraphs [0018 – 0030]). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention was made to use the teachings of Bolinth in conjunction with Owens for encoding the access code into sound waves using multi-carrier modulation to provide improved ways to transfer data (access code) and provide efficient ways to recover access code as suggested by Bolinth (see Bolinth paragraph [0014]).

Claims 2, 12, 20, 31, 42 and 51 are rejected applied as above in rejecting Claims 1, 11, 19, 30, 41 and 50. Furthermore, Owens teaches wherein the cryptographic key is a private key corresponding to a public key (Column 3 lines 61 – 67).

Claims 3, 13, 21, 32, 43 and 52 are rejected applied as above in rejecting Claims 1, 11, 19, 30, 41 and 50. Furthermore, Owens teaches wherein the cryptographic key is a symmetric key (Column 3 lines 61 – 67).

Claims 4, 14, 22, 28, 33, 44, 53 and 60 are rejected applied as above in rejecting Claims 1, 11, 19, 27, 30, 41, 50 and 59. Furthermore, Owens teaches a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element (Column 3 lines 31 – 50 and Column 9 lines 1 – 40).

Claims 34, 45 and 54 are rejected applied as above in rejecting Claims 30, 41 and 50. Furthermore, Owens teaches an audio input unit configured to receive sound waves encoded with a challenge; wherein the converter recovers the challenge; and the processor is configured to generate the access code using the cryptographic key and the challenge (Column 3 lines 31 – 50 and Column 9 lines 1 – 55).

Claims 7, 35 and 38 are rejected applied as above in rejecting Claims 1, 30 and 34. Furthermore, Owens teaches wherein the audio output unit comprises a speaker (Column 9 lines 1 – 29).

Claims 8, 16 and 24 are rejected applied as above in rejecting Claims 1, 11 and 19. Furthermore, Owens teaches an actuator coupled to the processor and configured to receive a signal that activates the generation of the access code (Column 3 lines 31 – 50 and Column 9 lines 31 – 67).

Claims 9, 17, 25, 36, 37, 46, 47, 55 and 56 are rejected applied as above in rejecting Claims 1, 11, 19, 31, 34, 41, 45 and 54. Furthermore, Owens teaches a user input unit configured to receive a first password; wherein the storage medium is configured to store a second password; and wherein the processor is configured to generate the access code if the first password corresponds to the second password (Column 9 line 61 – Column 10 line 11).

Claims 10, 18 and 26 are rejected applied as above in rejecting Claims 1, 11 and 19. Furthermore, Owens teaches a user input unit configured to receive a password; wherein the converter is configured to encode the password into sound waves; and wherein the audio output unit is configured to output the sound waves encoded with the password for authentication (Column 9 line 61 – Column 10 line 11).

Claims 48 and 57 are rejected applied as above in rejecting Claims 41 and 50. Furthermore, Owens teaches wherein the verifier device stores a first password and the method further comprises: receiving sound waves encoded with a second password; and recovering the second password; wherein verifying the access code comprises verifying the access code if the first password corresponds to the second password (Column 9 line 61 – Column 10 line 11).

Claims 40, 49 and 58 are rejected applied as above in rejecting Claims 30, 41 and 50. Furthermore, Owens teaches wherein the verifier device stores a first password and the method further comprises: receiving a second password; wherein verifying the access code comprises verifying the access code if the first password corresponds to the second password (Column 9 lines 1 – Column 10 line 11).

Claim 61 is rejected applied as above in rejecting Claim 59. Furthermore, Owens teaches code segment for generating challenge; code segment for converting the challenge into audio wave encoded with the challenge; code segment for outputting sound waves encoded with a challenge; wherein the code segment for verifying the access code verifies the access code based on the cryptographic key and the challenge (Column 9 line 61 – Column 10 line 11).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-232-4195. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy
April 29, 2007.

NASSER MOAZZAMI
SUPERVISORY PATENT EXAMINER
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4/30/07